# THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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## "THE NATIONAL" REPORT.

Credit is certainly due to the Hon. Secretary of the National Veterinary Association for the prompt manner in which he has got out the report of this year's meeting. Each speaker, we believe, receives a proof of his remarks for correction, and some gentlemen are most dilatory in returning their proof. There is a distinct advantage in issuing the report as soon after the meeting as possible, so that whilst the matter is fresh in the minds of members they may quietly look over the whole discussion. Facts are thus more deeply impressed and we are able to correct, from the arguments of others, any little fallacies we may have adopted.

The question may sometimes arise in the minds of members whether it is quite fair to those who pay that their proceedings should be made the literary property of those who do not. Every year we have published a tolerably full account of the proceedings taken from the official report. No complaint has ever been made, and not a single member has raised an objection. Probably no M.R.C.V.S has ever been guilty of such calculating meanness as to neglect joining the N.V.A. because he can obtain the advantage of reading its proceedings without subscribing. Practitioners neglect joining from thoughtlessness—not knowing the enjoyable two days their luckier colleagues spend every year. There must be some hundreds of veterinarians who have not yet joined "The National" who would appreciate the annual social meeting and the scientific discussions which are blended with it. Of course some men prefer a race-meeting or a dog show—tastes differ.

## THE "NATIONAL" IN 1894.

From the report we gather that the annual meeting will next year be held in London, about the same date as the Annual General Meeting of the Profession—*i.e.* during the first week in June. This arrangement is to enable us all to join forces so that one big event may be organised in honour of our Jubilee year.

The President is Mr. W. Hunting.

Vice-presidents, Messrs. J. R. Cox, Hurndall, Macqueen, M'Fadyean, Mulvey, and F. Raymond.

The elected Members of Council are Messrs. Almond, Edgar, Merrick, Lepper, Penberthy, Shave, Sheather, F. Smith, Roberts, Villar, Wheatley and Woodger.

*Treas.* Mr. F. Wragg; *Hon. Sec.* Mr. J.Malcolm.

A provisional Committee to organise the next meeting will be appointed at the first meeting of Council of the Association. A little united action should ensure a successful meeting, and meantime the Secretary desires it to be known that he is ready to enroll new members in any numbers.

## THE INDIAN CIVIL VETERINARY DEPARTMENT.

"India is a great agricultural country and is, and has been for generations past, infested by the most serious and destructive animal plagues; the losses caused by the different animal diseases have been estimated at £6,000,000 annually. There can be no doubt that the Civil Veterinary Department will be of enormous benefit to our Indian Empire." This is the opinion expressed in the recently published Army Veterinary Report by the Director-General, and we have no doubt it is correct—provided the new department be fairly treated and efficiently officered. We make this proviso because in another column will be found an extract from a Madras paper which, if true, indicates that at any rate in Southern India, fair treatment is not obtained. We publish the extract because we have heard through other sources that some jealousy of the veterinarian exists and that an attempt will be made on the retirement of the present Chief to place a non-professional man at the head of the Civil Department. We have very few prizes to entice men to spend their lives in India, and if the most lucrative post in the department is to be filled by a non-professional, our best men will decline to serve under him. It needs no argument to show that a veterinarian should be chief of a veterinary department but unfortunately argument does not govern appointments. We hope the Madras paper is wrongly informed, and that the Indian Government will see justice done.

## THE "LOUPING ILL" RESEARCH.

Until we see Dr. Klein's report it would not be quite fair to say much about it. The summary we published last week was in the form of a letter to the lay press, and signed by Mr. Wheler, the estate agent to His Grace the Duke of Northumberland. It is not usual for amateurs to attempt a condensed abstract of a scientific report, but perhaps Mr. Wheler possesses some special knowledge which enables him to interpret Dr. Klein to the agricultural mind. On the other hand Mr. Wheler may be one of those gentlemen who would undertake with equal confidence to interpret a technical report on naval architecture, or on—say the chemistry of the alchohols.

Were there no veterinarians who could have investigated "Louping Ill"? Is there any real reason why a bacteriological specialist should be selected for an enquiry into a disease of animals which has been recognised for years? Suppose pleuro-pneumonia were an unknown disease and had just appeared in England, what advantage would result from the employment of a bacteriologist? It is nearly certain he would find a bacillus—probably a dozen. Pleuro-pneumonia fortunately appeared before the microscope had superseded brains, and therefore was studied clinically. Now-a-days the first step in a really scientific research is to find the bacillus. He who does so is a high authority and a *scientific worker*. He who does not, may perhaps correctly note symptoms, method of spread, post-mortem lesions, etc. but these things are not science in 1893. Clinical observation is not accepted as research, and the collection of facts without the aid of a microscope is not *scientific work*.

## CASES AND ARTICLES.

### COLCHICUM AUTUMNALE POISONING.

By J. H. Parker, M.R.C.V.S.

Was attending a valuable cart stallion last spring for "punctured foot," a piece of slate having punctured the foot near the apex of the frog and injured the pedal bone. Twenty-seven days after the injury I was called early one morning to see the horse, as he was stated to be very bad. I had seen him the previous morning and he seemed to be doing well excepting that he was still slightly lame. I found him in the usual "well ventilated, comfortable loose box," in which he was walking round and round with two men making futile attemps to hold him back by means of a headstall. The lameness had disappeared. He was bathed in perspiration; his penis was protuded and pendulous; his movements were erratic and staggering. The walls of the box were literally plastered with fluid fæces, which seemed to have passed through the alimentary canal unaltered except with the addition of fluid, but they were not blood stained. The tongue was hanging out of the mouth, which was filled with foamy saliva. The gums and tongue were very black; pupils were dilated, eyes dull and vacant looking; ears slightly drooping. On the attendants releasing their hold he walked straight against the wall where he stood for about a minute. The pulse was 100, artery small impulse quick; temperature per rectum 105, extremities cold; respirations 80, laborious, and roaring faintly. At first drenching him was out of the question so we gave him a mixture of brandy and eggs well beaten up—per rectum. Applied mustard to the abdomen and cold water to the head. He gradually became worse. Breathing more laborious and roaring more distinct. Incessant wandering round the box and occasionally knocking his head against the sides. He then commenced to reel about all over the place, and seemed fighting for breath until at last he dropped and died in great agony, six hours after my being called in.

*Post-mortem* made directly afterwards showed intestinal vessels gorged with black blood; mucous coat of stomach and intestines red coloured irregular patches. Liver, spleen and kidneys very big and full of dark blood; lungs congested, tracheal and laryngeal mucous membranes black as pitch; vessels in dura mater and brain in similar condition. Having given an opinion that the cause of death was an irritant poison I brought the contents of the stomach home, with some from the small intestines, and tested for arsenic without result, and then sent them on to Professor Ivison MacAdam, New Veterinary College, Edinburgh, who on getting a colchichine reaction sent for some of the hay on which the animal had been fed, in which he found the leaves of the colchicum autumnale, which were also found in the contents of the stomach, and to this he attributed the cause of death. On the same farm later on a shire mare (in foal) had an attack of colic followed by a bloody hydrocatharsis and died two days afterwards from enteritis. She was in constant pain all the time, up and down, looked round to her sides, aborted six hours before death. The principal post-mortem lesion a gelatinous thickening of the mucous coat of the great colon throughout its length, it being fully half an inch thick and could be easily scraped off with the finger. There were no patches of erosion in the stomach or small intestines, and the mare was otherwise healthy. Another mare had violent diarrhœa for 24 hours and recovered, both cases we thought being due to the effects of the plant but in different degrees of severity. Needless to say the owner of the farm intends digging all the corms up this year as soon as he can determine their position by the appearance of the flower.

### CURIOUS NASAL OBSTRUCTION.

By Harold Leeney, M.R.C.V.S.

Rather a curious case was brought me to-day of a cat killed by a cat's tail, (phleum pretense).

The floor of a livery stable had been taken up, and three cats were said to have distinguished themselves by killing over a hundred mice, and my patient's greediness was supposed by the owner to have been the cause of his present condition. He had a discharge of pus and blood from the left nostril chiefly, but some from the right, and made a roaring sound at each inspiration; had eaten nothing since the great feast, and was so far gone in fact that a painless death was prescribed.

*Post-Mortem* examination showed no obstruction in the throat or pharynx, but on cutting through the palate I came upon the flower of the above named grass, two and half inches in length, which had probably been vomited into the nasal chamber *via* the posterior nares, and remained imbedded with the flower end towards the nostril. If it had been the other way on I believe the syringing which was attempted would have succeeded in dislodging it since its presence had produced such a copious discharge of pus and mucus.

In my own limited experience I have seen enough foreign bodies from the stomachs of cattle and other animals to form a small museum, but what could induce a cat to swallow a flower of this description? Was it the absence of triticum repens that dictated the selection of some other emetic, or was it "pure cussedness."

### HORSE SHOES BY MACHINERY.

On the shore of the Isle of Dogs, which here forms the north bank of the river Thames, not far from the spot where some 40 years ago Isambard Brunel's giant conception *The Great Eastern* first took the water, now stand the works of The United Horse Shoe and Nail Company, Ltd., the largest and best equipped of its kind in England. Whatever opinions may yet be held on the question of cold shoeing, there can be no doubt that the continued attention and improved machinery of this company has given to machine-made shoes their present strong position in

the market. They are used by most of the large horse-owning companies, and their popularity is evidenced by the output amounting to 1500 tons per annum. A brief description of the process of manufacture may be of interest.

Naturally the first consideration is the quality of material, for unless these shoes could show a fair average of wear they would not hold their own in the market, and yet the process of manufacture requires that the metal shall be fairly ductile. Like most other pioneers, the company has struck more than one lead which has proved unworkable. Now they work up all their own iron; only "best scrap" is used—and carefully bought at that. The first process is to put this up into bundles, or faggots, which are heated and welded under a steam hammer into bars about 18in. long and 3in. square. Next commences the formation of the shoes. These bars are brought up to welding heat in one of the Siemen's reverbatory gas furnaces, of which the company have several, and which for several reasons are found most suitable for the work, and then are taken to the "rolls." For the uniniated I may say that these are two rows of narrow cylinders or wheels of different sections on horizontal shafts; one shaft is driven from the powerful steam engine; and the result of passing the bar between the rolls is first that it becomes a square bar of smaller section but greater length, about 6ft. perhaps; this bar is passed back to the feeding side, still nearly white hot, and run through the next pair, and this is repeated until the bar is some 14ft. long and the requisite section for the make of shoes in hand. In the last roll the fullering is run in from end to end of the bar; this is effected by the use of a roll having on its peripheral edge a projecting ridge corresponding to the width and depth of the fullering required. These rolling operations must of necessity be done smartly, and the dexterity shown in handling the bars is interesting to an outsider. The holes also are deeply indented in the last roll, to be completed at a later stage by another machine.

Then follows the cutting to length and shaping. The latter is an ingenious process. On an iron table, above the surface of which project several steel studs, cylindrical in shape of about 3in. diameter and 6in. high, the straight lengths are placed, one at a time, between two of the studs so that the centre falls opposite a space rather wider than a shoe; a third stud is then driven against the centre of the bar and draws it between the other two, making it the shape of a letter ∩ A further lateral movement of a pair of studs rounds in the heels, and there we have the shoe shaped. Several minor processes have to be gone through before the shoe is completed, including a careful overlooking of each one before it is passed into store.

There are special details to be attended to in the make of some shoes—the Royal Artillery for instance—whilst the V.S. of companies have often their own views of what a machine-made shoe should be; and multiplying the different makes by several sizes it can be readily understood that the storerooms offer much that is interesting. In one of the offices, too, is a collection of patterns of past and present designs made by the company.

Necessarily the works are extensive, and in addition to the factory portion, at the other side of a public road which intersects the works the company make the gas for their gas furnaces. On the river front they have ample wharfage from which one has a fine view of Greenwich Hospital, offering—when the writer saw it under the bright May sunshine, with the fresh green of trees about the Naval School and in the Park as a background, the quaint Observatory above and the full river flowing in front—a strong contrast to the noise and bustle, the utilitarian forms and colours, and the essentially modern and commercial tone of the big buildings beside us.

W. H. B.

## VETERINARY SOCIETIES.

### MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A meeting of this Association was held on Tuesday, the 8th August, at the Grand Hotel, Birmingham, the President, Mr. T. H. Merrick, was in the chair, and among those present were Messrs. W. Carless, Malcolm, Trigger, Bainbridge, Burchnall, Proctor, Olver, Tipper, R. Cartwright, J. E. Cartwright, J. Blakeway, Thompson, Chambers, Warmington, Prickett, Butcher, Crowhurst, Wartnaby, Huband, Collett, H. J. Dawes (hon. secretary) and others.

Letters of apology for non-attendance were received from Professors Walley, McFadyean, Pritchard, Penberthy and Williams; Messrs. Russell, Freer, Perrins, Green, Wragg, James Blakeway, Barling, Gold and others.

The SECRETARY read the minutes of the last meeting.

The PRESIDENT nominated Professor Macqueen as an honorary associate of the Society. He thought that all who had attended their last meeting at Northampton had had great pleasure in listening to the address of Professor Macqueen.

#### NEW MEMBERS.

On the motion of Mr. Blakeway, seconded by Mr. Dawes, Mr. G. Watson Lamb, of Walsall, was elected a member. On the motion of the President, seconded by Mr. Olver, Mr. Percy C. Woolston, of Bedford, was elected a member. On the motion of the President, seconded by Mr. Dawes, Mr. G. Alton, Burton-on-Trent, was elected a member.

#### VET.-CAPT. SMITH'S EXPANDING SHOE.

Mr. OLVER said in accordance with the desire of some of the members he should like to say a few words with reference to the use of Professor Smith's shoe for expanding the heels of horses with contracted feet. He received the pattern shoe from Captain Smith (produced) and had one made from it to apply to a valuable hunter which had gone so lame that he could scarcely put his foot to the ground. After a fortnight's application, and by the assistance of the double screw in the shoe the heel was forced out. Then the horse was put to work with the shoe on, and he had hunted the whole of the last season in a perfectly sound condition. There was no doubt that in this case the contraction was caused by pressure on the laminæ and, by the expansion of the shoe, that pressure was removed and a complete cure effected the foot developing its normal size and shape in every respect. The shoe was an absolute success in his hands in this case.

Mr. TRIGGER asked if Mr. Olver could say anything more about other cases or was this an isolated case in his experience.

Mr. OLVER replied that that was the only case he had tried. In reply to further questions he said he could not say what the cost of such a shoe was. He could not say what was the measurement to which the foot had been expanded by the shoe, but he gradually widened the shoe by means of the screw each day, and the horse was at work in a fortnight, and the shoe was kept on two months.

The PRESIDENT:—Such a shoe as that could not be made under a couple of pounds.

Mr. OLVER:—Quite so, but the horse was worth a hundred guineas, and if it had not been cured it would have had to be shot. The foot had not gone back any since.

Mr. TRIGGER said that it was the duty of a Society like theirs to investigate such appliances as this. They were a rich Society, and he did not think one case sufficient proof for them to decide upon. In this case it appeared that the cure was due to the patent shoe, and he thought the Society would do well to obtain a dozen of these shoes to be given to the members who wish to try them and report as to the results obtained. He moved a resolution to that effect.

Mr. OLVER did not think Captain Smith had any quantity of the shoe made, he had lent him this one as a pattern, and he got a blacksmith in his town to make one from the pattern to fit the horse it was to be put on.

The PRESIDENT said he could get shoes made to this pattern of the sizes required in each case.

Mr. OLVER said each shoe to be used must of course be made to fit the foot.

Mr. PROCTOR seconded Mr. Trigger's motion, and he would have great pleasure in testing the shoe. The one case brought forward by Mr. Olver was very good as far as it went, but this was a very expensive shoe and it would require to be very thoroughly tested before it would be generally adopted.

Mr. OLVER said that Captain Smith would not object to the Society having some patterns made for the use of the members, but his permission would, of course, have to be obtained first.

The PRESIDENT agreed with Mr. Olver. He added that in his experience a good many cases of foot lameness were really knee lameness.

Mr. BLAKEWAY said that one pair of pattern shoes would be sufficient to get for the use of the Society.

Mr. MALCOLM said that those present were indebted to Mr. Olver for bringing forward Captain Smith's shoe and giving the Society the result of his experience. It was only just to Captain Smith that when such good results as Mr. Olver had told them of were obtained that they should be made public, and he cordially agreed with Mr. Trigger's motion. In conversation with Captain Smith at the Manchester meeting that gentleman had remarked how unsatisfactory it was to him when he recommended members to try various things he could never find out the result of the trials. In this case by Mr. Olver's report that difficulty was removed, and he felt sure Captain Smith would welcome the further test now proposed.

Mr. DAWES asked who was to have the custody of the pattern shoes.

Mr. CARLESS said Mr. Olver expressed the opinion that the best way would be to leave them in the hands of the hon. secretary to forward to members who applied for them.

Mr. OLVER said that half a dozen pairs would be sufficient for all purposes, and that they be added to the instruments already belonging to the Society.

The PRESIDENT:—Each member receiving them to report as to the results obtained from using them?

Mr. OLVER:—Certainly.

After some further discussion it was ultimately resolved "That subject to Captain Smith's consent half-a-dozen pairs of his patent expanding shoes be obtained and placed in the hands of the hon. secretary for use as patterns by members, each member applying for a pattern to report either by writing or verbally at the meeting of the Association as to the result obtained by him from the use of the shoe."

## THE PHYSIOLOGICAL AND PATHOLOGICAL SOUNDS OF THE HORSE'S CHEST.

By J. BLAKEWAY, F.R.C.V.S., Birmingham.

Mr. President and Gentlemen,—Whenever a man ventures to give hints or offer advice to others, he lays himself open to a charge of both arrogance and presumption, unless he can bring forward a good reason for fancying himself qualified for the task, for it not merely implies, but plainly shows that he conceives he knows more about the matter than the generality of those for whose consideration he submits his remarks. It therefore becomes not only a matter of proper respect to them, but a duty he owes himself to explicitly state that, in offering his suggestions and hints, he does not consider his qualifications for the task to arise from any fancied superiority or particular perspicuity of intellect. I feel that I stand in the delicate position I have described, in venturing to lay before this meeting my few scattered remarks. There are beyond doubt many gentlemen present who possess more knowledge of, and have had more practice in the matter contained in this short paper than I can boast, and I am equally willing to give them credit for being able (if they feel inclined to do so) to lay their experiences before the members of this Association in better form and terms than I can, and it is simply in the hope of rousing that inclination, that at the request of our President, I consented to produce these notes. The first thing that presented itself to me was, what subject to take for my theme; and looking back at the able addresses we have had of late years and the multitude of subjects they embraced, it became a matter of some consideration to decide upon a suitable one; finally, gentlemen, as you will see by your agenda papers, I hit upon "The Physiological and Pathological Sounds of the Horse's Chest." In the first place, I was anxious to deviate as far as possible from the well trodden ground of splints, spavins, side bones, &c. Then again this was a subject I was desirous of further investigating with the view of increasing my own knowledge, and felt I would be likely to do so not only from arranging and stating my own information but particularly from the good discussion I trust I may be fortunate enough to provoke.

Now, I do not for one moment maintain that we veterinarians can be expected to diagnose the various stages of chest disease with anything like the accuracy medical men can and do; the odds are against us in such matters as position of patient, muscular thickness, surrounding noises &c., &c., but I *do* think we can improve upon our present position; for, taking myself as an average practitioner, I know I used frequently, when called in to treat chest affections, apply my ear to the side or sides, notice a little abnormal sound and respirations accelerated, sum the case up as pneumonia, apply stimulant to sides, with usual febrifuges internally, and the thing was done with. I am persuaded that is a state of affairs which has existed in, I was going to say many, but rather than tread on anyone's corns I will say several men's practices. My object in compiling this paper is to find out, or rather endeavour to produce a discussion that will show us, how far we are in a position to

accurately differentiate between the abnormal sounds accompanying the various chest disorders of the horse.

Before going further it may not be out of place to just run over the physiological, or normal, state of affairs. If the ear or stethescope be applied over the trachea of a healthy animal, tubular blowing or bronchial respiration is heard, a sound as of air blown to and fro through a tube, and with moderate velocity; the mechanism of the sound being the entrance and outflow of air currents through the narrowed glottic aperture of the trachea, producing sonorous vibrations within the tube below. As the ear is passed downwards, to the first piece of the sternum, the same sound is still heard, but more distant and muffled, and finally it becomes obscured by the *vesicular pulmonary sounds*, into the production of which it necessarily enters.

*The pulmonary vesicular breath sound* is produced by the friction of air entering the air sacs from the minute bronchioles, and it is supplemented by the conduction of what remains of the glottic breath sound, now infinitely subdivided. During calm breathing the sound accompanying *inspiration* is soft and breezy, even in intensity from commencement to near the end, when it fades without perceptible interval into the expiratory sound. The *expiratory* sound commences at the moment inspiration ceases, being continuous with the inspiratory sound, but it rapidly fades in intensity ceasing to be audible after the first third of the expiratory act. Of the time occupied between the commencement of one inspiration and that of the next, the inspiratory act occupies nearly one half, the expiratory act the remainder, with the exception of a very brief interval of pause between the end of expiration and the commencement of the next inspiration. When the expiratory sound is audible through a longer period of the act than natural, the expiration is said to be *prolonged*. If the respiration be hurried and forced the inspiratory sound is coarser and louder and the expiration more audible, the sounds approximating to the *puerile* or *juvenile* breathing which is normal to young animals and due to the air-cells being more numerous and smaller and the entire pulmonary tissue being more elastic in nature. Dr. Taylor says in respect to hurried respiration "it is louder and harsher than the normal breath sound and the expiratory murmur is almost or entirely suppressed." In health the vesicular breath sound should be about equally well heard over both sides of the chest, allowance being made for additional thickness of covering over certain regions. In the horse we may take it that about two-thirds of the chest are exposed for auscultation; from behind the scapulæ and elbows, the murmur slightly increases in force to the tenth or twelfth rib, thence becoming diminished; on the left side in the lower third the pulsations of the heart interfere with its detection.

I do not purpose treating of the *percussion* sounds, in this paper but simply those heard in auscultation, and as you are aware auscultation may be performed in two ways, by direct application of the ear to the chest, when it is termed *immediate*, or a medium may be used between the ear and the part under observation, when it is termed *mediate* auscultation. It is generally considered by veterinary practitioners that the direct application of the ear to the chest is better than ausculation by an intervening instrument, and I do not wonder at it, as the stethescopes used by medical men and sold by veterinary instrument makers are practically useless, at least so far as the horse is concerned, and of course the same applies to the cow; however I will now introduce to your notice an instrument I got made the other day that *is* useful, and with it I am satisfied I can detect the chest sounds better than with the naked ear—to say nothing of the comfort of the thing, for it matters not whether your horse's sides are clean or dirty or what position he is in.

The pathological thoracic sounds distinguishable, are either such as may be viewed merely as altered normal, or morbid sounds, and adventitious, or sounds added to the ordinarily existing ones, and of a different character.

### Morbid Respiratory Sounds.

*Puerile, compensatory,* or *supplementary breathing,* is characterised by increased loudness or vesicular breath sound, with some prolongation of expiration. Besides being audible over the chest generally in healthy *young* animals, this exaggerated breath sound may be heard over certain portions of the chest, when some other part is disabled or diseased—for instance with effusion of fluid into one pleura (this of course does not apply to the horse, on account of perforation of posterior mediastinum) the respiratory sounds over the opposite side are exaggerated or puerile to make up for deficient function in the affected part, this is termed compensatory or supplementary breathing.

The breath sound may be enfeebled over the whole chest, as in cases of emphysema (broken wind) or thoracic muscular debility.

Localised enfeeblement of breath sound may be due to various causes, viz., local emphysema, adherent and thickened pleura, blocking of the alveoli by catarrhal products, and closure of bronchial tubes by plugs of mucus. If the rest of the lungs be free, this local enfeeblement is made up for by compensatory breathing on the opposite side, or in other parts of the same lung.

*Suppressed breath sound* signifies removal of lung from the surface by effusion of air or fluid into the pleura, or occlusion of a main bronchus by compression or morbid growth.

*Wavy or jerking* respiration are terms characterising a kind of respiration in which the inspiration is either partially or completely interrupted several times. The expiration is rarely thus affected. Waviness of respiration may be due (1) to an irregular action of the inspiratory muscles, not common in our patients, but frequently met with in nervous people; (2) to cardiac impulse, in which case these interruptions are rhythmic with the heart's pulsation; (3) unequally distributed impairment of the lung elasticity, for example in early tubercle deposits, pleuritic adhesions are said to have the same effect. Waviness of breath sound may occur independently of any organic change and requires other signs to render it of any value in diagnosis. Jerking respiration or interrupted breath-sound is more commonly due to organic lesions of the third kind mentioned.

*Cogged breath sound* is a term applied to a form of interrupted respiration in which the interruptions are very even, three or four to each inspiration. It appears to be due to obstruction in the smallest bronchioles, either by dryish secretion or small nodules of tubercle, requiring some accumulation of inspiratory force to overcome it. The sounds commonly give place to a bubbling râle.

*Harsh or rough respiration with prolongation of expiration* implies a want of vesicularity in the sound. Whilst vesicular breath sound has been compared to the sound produced by the breeze passing through leaf laden trees, harsh breathing on the other hand resembles a similar breeze traversing their naked branch tops. Some prolongation of the expiratory sound is inseparable from harshness of breath sound. Harshness of breath sound by no means implies increased loudness—rather the contrary. Enfeebled respiratory murmur is commonly harsh—always so when due to alveolar obstruction. The meaning of harshness of breath sound is simply commencing consolidation; in the human subject it goes with incipient dulness and is one of the earliest signs of apex disease in consumption. There can be little doubt that its real mechanism depends upon the extinction of the

vesicular part of the normal breath sound, and the better conduction of the glottic sounds, which at peripheral parts of the lungs are usually muffled and obscured by the vesicular sounds. The prolongation of the expiration is very characteristic of this early alteration of the respiratory sounds, and it may be mentioned in passing, with regard to *morbid* breath sounds that the *expiration* is the most important part of the respiratory act to attend to in auscultation.

*Divided respiration* frequently described as a separate evidence of disease, is really an inseparable factor of harshness of respiration. Instead of the two component sounds inspiration and expiration fading imperceptibly into one another they are more or less distinctly separate, the more so as the more typical bronchial type of breathing is acquired. Deficiency of elasticity is the cause to which the division is usually ascribed; it is however a significant feature of glottic breathing. When vesicular murmur is displaced by divided respiration there is always the pathological condition of inflammation; it may be simple, tubercular, septic &c. Which is present? is the subject of further investigation, but *any* inflammation thickens the alveolar walls, and so diminishes their elasticity and renders the change from the distension of inspiration to the collapse of expiration more difficult to perform.

*Bronchial respiration* is most typically heard over simple lung consolidation, as pneumonia at the base or apex. The sound is acoustically identical with that produced by placing the mouth in the position to pronounce the gutteral *ch* (as in choir or christian) and drawing the breath to and fro. The inspiratory and expiratory sounds are about equal in length, nearly identical in pitch, and distinctly divided from one another. The sound varies in intensity and definition from the most intense tuberlar or tracheal breath sound to the lower pitched and more diffuse blowing respiration (diffused bronchial breathing). Besides hepatisation of lung this form of respiratory sound may be produced by other condensations of lung, for example, from pressure, or by tumours extending from the neighbourhood of a large bronchus to the surface, such as enlarged bronchial glands, mediastinal growths, and aneurismal tumours. The more diffused blowing sounds are due to less complete consolidation. It is essential that the bronchi be patent, in order that bronchial respiration may be heard, thus in cases of cancerous growth invading a lung from its root and occluding the bronchi no respiration is audible. As regards mechanism, however, it can scarcely be maintained that the sound is produced by the passage to and fro of air in the bronchi of the consolidated lung, for (1) at the period when bronchial breathing is most distinct, the lung is immovably fixed by exudation; (2) the play of the chest wall on the affected side is almost or quite restrained; (3) the air cells being occupied, there is no reason why air currents should penetrate the bronchi. Hence it would seem that bronchial respiration is but the glottic breath sound reverberating through the bronchial tubes and well conducted to the surface. Chauveau in 1877, to prove this, took a horse with hepatisation of the base of one lung and bronchial breath sound over the part affected, he incised the trachea below the glottis and held the wound widely open, the bronchial breathing immediately disappeared, all respiratory sound ceasing over this portion of lung, whilst elsewhere the vesicular breath sound was unimpaired, he then inserted a musical reed into the wound and the musical sounds were well conducted over the consolidation, but little audible over the healthy portion of lung. Bronchial respiration is also met with apart from condensation of lung tissue, being sometimes heard as an accompaniment of emphysema, in which, while the breath sounds are enfeebled as a whole the expiration becomes relatively more marked, and therefore approaches the bronchial character. Dr. Bullar thus accounts for bronchial breathing—the lung being solid and motionless, the bronchi patent, it is the passage of air over these patent tubes that produces the sound, like blowing across the top of a bottle.

*Cavernous respiration*, although not of much moment to us as veterinarians, may be just mentioned in passing. Its a breath sound in which the inspiration and expiration have both a hollow blowing quality. It is to the expiration that the hollow wavering quality characteristic of this breath sound is especially attached, and as pointed out by Dr. R. Thompson, the expiratory sound is lower in pitch than the inspiratory. Cavernous breathing signifies pulmonary cavity, usually phthisical—(1) exceeding in size an unshelled walnut; (2) either empty or at least partially so; and (3) communicating with one or more patent bronchial tubes. Softening of tubercle or caseous pneumonia, pulmonary abscess, or bronchial dilatation of sufficient size, are the most common causes of cavity in the lung. This abnormal sound is formed by (1) the passage to and fro of air into a cavity with the respiratory movements; (2) the conduction and modified reinforcement of the glottic respiratory sound within a cavity.

*Amphoric breath sounds* is a variety of cavernous respiration having the same characters, but on an exaggerated scale, that is necessarily exaggerated as regards loudness, but having all the qualities—blowing character and hollowness—intensified. This sound is heard over a large superfical cavity, either in the lung or between the pleura freely communicating with the lung. Its mechanism is identical with that of cavernous respiration, only that the size of the cavity is large, in fact it is the special characteristic of very large cavities especially of pneunothorax, where the pleuræ are separated by air.

### Adventitious Auscultatory Sounds.

The adventitious sounds of the lungs themselves may be divided into *rhonchi* and *râles*, they are both produced by impediment to the passage of air through the lungs, from narrowing of the tubes. This narrowing may be caused by (1) an accumulation of mucus; (2) thickening of the lining mucous membrane; (3) spasmodic constriction of the muscular walls of the bronchi; (4) pressure of some tumour on the tube. It was formerly the custom to give each individual sound a specific name, as you are all no doubt aware from your frequent perusals of veterinary literature; and perhaps were equally as puzzled as I have been; thus, there were clicking râles muco-crepitant, sub-crepitant, and so on; but by a general consensus of opinion such minute sub-division has been considered no help to diagnosis, and the following simple arrangement is now substituted:—

*Rhonchi* are the sounds heard in the large tubes, they differ amongst themselves according to the size of the bronchial tube and the extent of the narrowing. They are likened to the familiar sounds of cooing, groaning, snoring, grunting and whistling; the lower pitched snoring rhonchi are produced in the larger tubes and are termed *sonorous rhonchi*; the higher pitched whistling sounds are produced in smaller tubes and are termed *sibilant rhonchi*.

*Râles* are crackling or rattling sounds, they are heard in the small and medium sized bronchial tubes or in pulmonary cavities, they are produced by air forcing its way through secretions, thus causing bubbles to form and burst with a slight noise. They are moister in character than the rhonchi; which are sometimes termed in contra distinction to râles, *dry* sounds. Râles differ according to the size of the bubbles, and are called *small*, *medium*, and *large*, they are also divided according to the character of the sound into bubbling and crackling. *Crackling râles* have a sharp clear ringing explosive character, which is probably due to their occurrence in consolidated lung,

which therefore conducts the sound better; *Bubbling râles* are dull, not ringing or explosive, and occur in tubes surrounded by normal tissue. So that râles are divided according to their character, into bubbling and crackling, and according to their size into small, medium and large. The very smallest of râles are termed *crepitating râles* or briefly *crepitation*, they can be very well imitated by rubbing the hair between the finger and thumb, close to the ear, by rustling of silk, and by rubbing the palmar surface of the finger on unplaned wood; they occur in the first stages of pneumonia and in œdema of the lung. In the latter stages of pneumonia the râles get slightly coarser and moister, and the term then applied is *redux crepitation* which is of course only a very small râle. *Crepitation* and *redux crepitation* are produced by the reopening up of minute bronchioles the lining membrane of which has become adherent by the sticky exudation which occurs in pneumonia. Crepitation and the smaller râles are only heard during inspiration, the medium sized and larger may be heard during both inspiration and expiration.

*Pleural sounds*, the sounds originating in diseased conditions of pleura are "friction sounds." The pleuritic rub of dry friction, is a wavy or uneven rubbing sound, heard close under the ear with both inspiration and expiration, but chiefly with the former, unmoved by cough and usually attended with pleuritic pain. We may fail to obtain this sound through the animal involuntarily restraining the movement of the affected side on account of the pain. A deep inspiration should therefore be caused by covering the nostrils with the hand for a few seconds immediately after expiration has taken place. In well marked cases the friction is very loud and leathery, and it is stated may be preceptible to the hand applied.

It is sometimes difficult to determine whether the sound heard is the friction sound of pleurisy or the crepitating râle of pneumonia, but it should be remembered that the surface of the lung cannot be inflamed without the pleura covering it sharing also in that inflammation, and therefore giving its own physical sign. Pleural friction may be regarded as a dry sound, seeing it is only recognised prior to the condition of effusion and becomes inaudible with the existence of fluid in the chest, the sounds abruptly ceasing at a certain height from the floor of the thorax indicative of the height to which the fluid has extended.

### Heart Sounds.

By the simultaneous contraction of the ventricles, the closure of the mitral and tricuspid valves, and the impulse of the heart against the wall of the thorax, a single sound is produced, the first sound of the heart; this sound is closely followed by the second sound, which is more tapping in quality and corresponds with the closure of the aortic and pulmonary valves. Then comes the diastolic pause which may be said to equal in duration that of the two sounds; the first sound is most loudly heard at the apex, the second at the base of the heart. The sounds of the heart are subject to considerable variations which like those of the pulmonary sounds may be spoken of as *altered normal sounds* and *adventitious sounds* or cardiac murmurs.

In addition to the above I will mention the intermittent action of the heart; this may be merely functional or due to some temporary disorders such as indigestion. In many cases it is the result of organic or structural disease. Here comes in a very important factor in the examination of horses for soundness. Personally, I always make a point of listening to the heart sounds, and I maintain it is the duty of every practitioner to do so when called to examine a horse; as it frequently happens (so far as we are able to detect) the intermittent action of the heart is simply functional, and although we should, strictly speaking, be justified in rejecting such an animal, it may be only a temporary affair and the heart resume its rhythmic beat in a few days' time. I have known horses work for years with intermittent heart action, apparently without the slightest inconvenience; in those cases I should be inclined to look upon the cause as due to some defect in the intrinsic nerve ganglia of the heart.

The heart's action is sometimes irregular in the beats, it should be of uniform character with an interval of uniform length between the successive beats; the irregularity may be of such a kind that no order can be observed at all, long and short intervals between the beats follow each other indiscriminately; it commonly occurs in mitral disease and in dilation of the left ventricle.

*Modifications of the normal sounds.* The heart sounds may be accentuated, diminished, or reduplicated. They are *accentuated* from increased tension in the aortic or pulmonary arterial system, whereby the valves are caused to close with unusual force, this commonly occurs in fever, after exercise, and in hypertrophy of the left ventricle. In consolidation of lung, when the right one is affected, the heart may be easily heard on the right side, owing to the increased resonance imparted to the heart sounds by the lung consolidation.

*Diminution* of sound results from feeble action of the heart, or from its being surrounded by pericardial effusion.

*Reduplication* arises from want of synchronism in the action of the two sides of the heart, and may affect either the first or second sound.

*Adventitious sounds, murmurs, or bruits* accompany or replace the physiological sounds, and are due mainly to two causes: (1) obstruction or narrowing of a cardiac orifice, such as is produced by vegetations on the valves; (2) if the valves do not perfectly close the orifice some blood will flow back or regurgitate into a cavity whence it came, and this leaking will also give rise to abnormal vibrations.

Murmurs differ from one another, (1) in time; (2) in their relation to the orifices of the heart; (3) in the character of the sound.

*In relation to time*, murmurs which are heard with the first sound or between it and the second are termed *systolic*, others occuring during the dilation of the ventricle are termed *diastolic*.

*In relation to the orifices of the heart*, at each of the four orifices of the heart there may be an obstructive or regurgitant murmur, or both. Taking the least common first, obstruction at the pulmonary orifice is extremely rare and is always congenital. Pulmonary regurgitant murmurs are also very rare and also congenital; should they be acute they can only be due to malignant endocarditis. Tricuspid obstruction is exceedingly rare, and no special groups of symptoms can be referred to it. Endocarditis which is the chief cause of valvular deformities rarely attacks the right heart. Regurgitation, however, may arise from a simple dilation of the orifice which the valve is unable to cover, although itself healthy, which frequently happens to the tricuspid orifice as a result of disease of the left side of the heart, producing tricuspid regurgitation, the only form of valve disease at all common on the right side.

*Aortic obstruction and regurgitation* usually occur together, pure aortic obstruction is very rare; obstruction and regurgitation are often the result of continued strain upon the circulation; obstructive and regurgitant murmurs would follow sudden rupture of the valves. In pure regurgitant cases the heart is greatly hypertrophied and the effect on the pulse is peculiar and characteristic; the hypertrophied ventricle drives the blood with great force into the arteries and it is felt as a big thump against the finger, but the valves closing imperfectly the

column of blood is not sustained and the pulse suddenly subsides; such a pulse is termed kicking, splashing, or collapsing. The termination by sudden syncope is more common in aortic regurgitation than in any other form of valvular disease.

*Mitral obstruction* at first affects the left auricle, which becomes hypertrophied in its endeavour to overcome the obstruction—usually due to vegetations on the valves, or the constriction that follows the healing of these vegetations; the murmur produced is rough, rumbling, churning in character and generally loud. Mitral regurgitation and obstruction not uncommonly occur together; regurgitation alone is more frequent.

*In character of sound* all are soft, blowing, or bellows murmurs, except that of mitral obstruction, which is harsh, loud, and churning. We may take it that all murmurs in the heart indicate a serious lesion, and are most frequently met with on the left side of heart, the commonest of these is *mitral regurgation*. What valve is diseased may be determined by examining whether the murmur occurs during systole or diastole.

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At the conclusion of his paper, which was very cordially received Mr. Blakeway said the ordinary binaural stethoscope was practically useless for auscultating the horse's chest. It might be used for the dog but not for the horse. It occurred to him therefore that by enlarging the receiver of the stethoscope, and thus entrapping a larger number of sound-waves, better results might possibly be obtained. He had had one made (produced) with the chest piece 2½ inches in diameter and with that he found he was able to detect the chest sounds considerably better than with the ordinary instrument, and quite as well as with the naked ear. He thought he could improve on this special stethoscope. He had had a second one (produced) made with the chest piece three inches in diameter but it did not give such good results, as the friction sounds caused by its application were, he found, troublesome. The one 2½ inches in diameter he found an exceedingly useful instrument. Mr. Blakeway also showed a special balling iron he had had made to prevent the rocking in the mouth, and open at the end so as not to interfere with the free use of the tooth rasp. He also produced for the inspection of members a ball of hair found in the 4th stomach of a cow, and a specimen taken from a year old ewe in which the vaginal and anal orifices were combined.

### Discussion.

Mr. Malcolm after expressing his indebtedness to Mr. Blakeway for his very able paper said it had often been urged as a matter of reproach against the Midland Association that they had not made such contributions from local men and they had often had men from a distance but very few of their own members had ventured to read papers at the meetings. He hoped the example Mr. Blakeway had now set would be followed up by others of their young members. He had been in hopes that Mr. Blakeway would refer more to the conditions existing in special diseases than to the natural sounds of a horse's chest. In *The Veterinary Journal* last week he noticed a professor in the Turin Veterinary School had sought to prove that the paces of a horse synchronised with its respiratory sounds. Could Mr. Blakeway give any opinion upon this assertion? He thought Mr. Blakeway was somewhat hard upon the average veterinary practitioner, for his opinion was that the average practitioner took considerably more care in the examination of the chest than Mr. Blakeway seemed to give him credit for. After testing the special stethoscope which Mr. Blakeway had shown them he thought it was a better instrument than the usual binaural stethoscope, but whether one could hear the chest sounds better with this improved stethoscope than with the ear he was not in a position to say. Personally he had always used his ear without any intermediate body, but as he was not very quick in hearing he should be glad of any instrument that would assist him in taking the sounds of the horse's chest better than he could with his ear. But at the present time the little experience he had had of the binaural stethoscope had not allowed him to form a definite opinion. It required considerable experience, he believed, before one could determine the different chest sounds through the stethoscope. Mr. Blakeway had spoken of inspirations being wavy, what did he mean by that term? He had always looked upon the expiratory movement of broken wind as wavy, and he did not know any other condition of the horse in which they got such wavy action. In reference to the heart sounds, he had failed to find any reference to pericarditis, a condition more certainly often found in cows than in horses, in Mr. Blakeway's paper.

Mr. Olver did not think Mr. Blakeway's paper was open to much discussion inasmuch as the greater part of it was facts that were not open to dispute. As to the stethoscope he had used both kinds constantly but without any satisfactory results, and he believed he could tell infinitely better the chest sounds by his ear than by any stethoscope that had come into his hands. The description Mr. Blakeway had given of the different chest sounds for different diseases all would agree to, but what was wanted was some means by which these sounds could be recognised in the early stages of the disease. One sound Mr. Blakeway had referred to as caused by cavity in the horse's lungs. He could not call to mind any one case of cavity in a horse's lungs, though cavities were frequently found in the lungs of cattle. He was afraid he did not always act up to Mr. Blakeway's injunction as to examining the heart action when certifying for soundness, but he saw no objection in doing it, though it was an open question whether a veterinary surgeon would be justified in rejecting a horse straight away whose heart action was not perfect; because it might be caused by mere temporary derangements. He had examined by auscultation now to a considerable extent, and found it a considerable aid in the examination of chest disorders. With reference to the abnormal condition in the specimen from a ewe which Mr. Blakeway had exhibited, he (Mr. Olver) had observed exactly similar conditions in a horse at Sutton Coldfield. He observed the horse for ten years working and it had a common orifice for the vagina and the anus. When the horse died he did not have the opportunity of making a post-mortem.

Mr. Wartnaby agreed with Mr. Blakeway as to the necessity of examining the heart sounds of a horse when certifying to soundness. It might not be right to reject a horse at first because of irregularity in the heart sounds, but he was afraid too many veterinary surgeons paid no attention to them at all. If they did so they would probably be much more severe in their examination.

Mr. Carless would have liked Mr. Blakeway to deal more with the abnormal sounds which were to be found in various diseased conditions of the horse's chest. He thought the stethoscope Mr. Blakeway had brought forward would not become very popular, he had tried various instruments but had always gone back to the ear, as he found instruments were likely to be affected by external noises. With Mr. Blakeway he quite agreed that it would be better if veterinary surgeons generally gave more attention to the sounds of the chest. He thought more results could be obtained from auscultation and percussion than were got now.

Mr. Huband endorsed what Mr. Carless had said about the necessity of examining chest sounds. He had generally contented himself with taking the pulse and if he found that pretty right he did not generally go further.

Mr. TRIGGER, after hoping that the example Mr. Blakeway had set would encourage other members of the Association to contribute papers and so make them a self reliant body, said there was no doubt that the importance of auscultation had advanced greatly these last few years, and there was no auscultation like that with the naked ear. Only a week ago he had a case in which it appeared that a mare was suffering from acute inflammation of the lungs, because she was blowing very heavily and he knew she was not broken winded He diagnosed it as gastric pneumonia, the disordered breathing arising from the state of the stomach. He auscultated that animal and was perfectly astonished at the whistling sound in the lungs. He gave her six drams of aloes at once and ordered bran mash, and that of course would have been altogether wrong treatment in inflammation of the lungs. He however was convinced of the disorder, and kept the mare at active exercise, and in a day or two she was all right and the crepitous condition of the lungs had quite gone. There was no lung lesion here at all only stomach disorder, and yet there was the extraordinary whistling sound in breathing.

Mr. DAWES mentioned another case of peculiar symptoms. A horse in harness which had bolted was brought to him with a wound in its neck having ran into a wall. There was a large hole in the neck, but the trachea was not injured. He stitched the wound, and when it had healed advised the man to take the horse out for exercise. He went all right so long as he was driven in a straight line but immediately he attempted to turn he commenced to fight and to make a most terrible noise in breathing, and he vomited about half a pint of blood which seemed to come from his mouth. He (Mr. Dawes) called in Mr. Malcolm who suggested a long rest and quietness. This was done for two months and an improvement was noticeable, but still the horse was very bad when he was turned. A second period of rest of two months was given and then he got all right. Still the question was what was the matter with the horse when he showed such extraordinary symptoms in turning.

Mr. MALCOLM said the breathing of this animal when he saw him was highly spasmodic, and if he had been driven a few steps further in a circle he would inevitably have fallen. About ten minutes after being put back in the stable he appeared all right.

The PRESIDENT then summed up the discussion. He agreed with those speakers who had shown a preference for the ear over the stethoscope for auscultating. He thought there was something to be said for taking the pulse in examining a horse for soundness, he invariably did it now, but he thought there was more importance in taking the pulse than in listening to the heart sounds. Equine animals as a rule did not suffer much from heart diseases. He thought it might be well if copies of papers to be delivered were given to the members sometime before the meetings, it would facilitate discussion.

Mr. BLAKEWAY in reply acknowledge, with appreciation the kind way with which his paper had been received. One of his objects in bringing it forward was to induce members to try the stethoscope for auscultation. He was satisfied in his own mind that if they had something better than the ear they would make more advance in diagnosing chest complaints. The ordinary medical binaural stethoscope he confessed was useless for veterinary work, hence the failures admitted by those relying upon it but he was sure he could improve still further on the special one he had shown the meeting. In reply to Mr. Malcolm, the sounds from broken wind he should not describe as Mr. Malcolm had done by saying they were wavy; rather that the expiration was double or dicotic. The indications of broken wind as evidenced by auscultations varied very much. By direct auscultation he had never been able to detect those wavy sounds. Mr. Olver found exception to his reference to cavities in the lungs but he had satisfied himself by personal examination that cavities did exist in horses' lungs in cases of gangrene. Veterinary surgeons of course would be doing wrong in rejecting a horse on first examination for intermittent heart's action, but if he detected intermittent sounds he should advise his client to bring the horse back a day or two before passing it. It had been remarked that better results could be had from taking the pulse than from the heart; but it was not always possible to get the pulse distinctly. The pulse was not always sufficient indication in regurgitations. Some heart affections might not clearly appear in the pulse. Mr. Malcolm wished to know his authority for his statement in respect that murmurs due to stenosis of the pulmonary orifice were congenital, it was Dr. Fredrick Thompson, M.D., London, F.R.C.P. etc. It was a fact that heart diseases did not exist to any extent on the right side of the heart, but almost invariably arose on the left, and the mischief on the right side was the sequel to it. Regurgitations on the right side were frequently due to dilation of tricuspid orifice, the valves being insufficient to close it, and generally arose from mischief on the left side.

On the motion of Mr. TIPPER, seconded by the PRESIDENT, a vote of thanks was accorded Mr. Blakeway for his paper.

NEXT MEETING.

Mr. R. CARTWRIGHT moved and Mr. J. CARTWRIGHT seconded a resolution that Wolverhampton be chosen for the next meeting of the Association.

Mr. BURCHNALL proposed that Derby be selected, and this being seconded by Mr. WARTNABY, the vote was in favour of Derby.

After the meeting the Members sat down to dinner, the President in the chair, and a very enjoyable evening was spent.

H. J. DAWES, *Hon. Sec.*

## NATIONAL VETERINARY ASSOCIATION.

### THE INSPECTION OF ANIMALS INTENDED FOR FOOD.

By PROFESSOR M'FADYEAN, M.B., B.Sc., F.R.S.E.

DISCUSSION, (*continued from page* 137).

Mr. MERRICK:—Three or four years ago I accepted the invitation of the British Medical Association at Birmingham, and I there asked a question which has never been answered. It has not even been mentioned in Professor M'Fadyean's paper at all. This is the point. I, in my practice, have very often ordered the destruction of a beast subject to parturient apoplexy. Medical men hold that no animal that has died or been slaughtered within a certain time of parturition is fit for human food. I would ask the opinion of the profession as regards the condition of the meat of animals which have suffered from parturient apoplexy and have been slaughtered, which have calved in a perfectly natural way, and in which the calf was not in a state of decomposition.

Sir HENRY SIMPSON:—The paper which Professor M'Fadyean has very kindly submitted to us was one which I had looked forward to with a very great deal of interest, not because I have taken a very great deal of interest in the subject, but because I desire to learn a very great deal on the subject, and I wish to tender to Professor M'Fadyean my individual thanks for having enlightened me extremely on this very important question. I find Professor M'Fadyean alludes to a matter with regard to the medical officer determining what disease shall render an animal unfit for human food.

Of course, looking at it practically, if we were to be inspectors of meat, we shall not only have to be inspectors of meat, but we shall have to give a decision as to whether it is fit for human food, or not; and I think if we have to advocate before the public that two appointments will be necessary to decide that question, we go a long way to prevent our services being called into requisition. It would be quite easy at a conference to tabulate the diseases which render animals unfit for human food, and, in my opinion, the veterinary surgeon should not only be the inspector of meat, but should determine whether it was fit for food or not. I am sorry to learn that Professor M'Fadyean thinks the inspection of carcases is a mistake; because, looking at the present supply, and what is likely to be the supply of animal food in the future to these islands, we must be prepared for a very large importation of dead meat from abroad, and we must be prepared, in regard to the large towns, for a large importation of dead meat from without; and therefore in many cases, perhaps in the majority of cases, an inspection of the viscera, which would aid us very much indeed, is quite out of the question. I think we must try and concentrate the greater part of our energy upon determining the fitness of a carcase for human food with such evidence as we can obtain. Of course, I quite admit that the most perfect system is that which Prof. M'Fadyean recommends, but, under the circumstances, I think that that is not possible. If we were limited by circumstances to an examination of a carcase, I should be glad to know that we could in some way exercise some supervision and examination which would certify to the British public that we were capable of determining whether it was fit for human food or not. I am very much appalled at the price which inspection costs under the very strict rules which are in operation in Berlin, at the abattoir. I see Professor M'Fadyean tells us it costs £25,000 per annum: anything of that kind, I am afraid, is not likely attract the British ratepayer. I should like to know—probably Professor M'Fadyean will be able to tell me—whether that inspection is carried out in Berlin by veterinary surgeons or by other professional men. I got yesterday a cutting from the *Standard* of a case tried at the Guildhall, and I see no mention of a veterinary surgeon being engaged—one never does. There was a prosecution. The medical officer of health for the city said that an animal had tubercular disease, and he sent it to Dr. Darwin, the lecturer on hygiene at Guy's. In the end the man—a very respectable farmer—was fined £25, and he said he did not know the lungs were bad.

Mr. Peter Taylor:—This subject of food inspection is a very wide and important one, both to those who are practising in our large towns, and those who are practising in our suburbs and in the country districts. I should have liked Professor M'Fadyean to give us his opinion as to the way in which carcases are presented to veterinary surgeons in the present day. I am a great believer myself in public abattoirs. I am a great believer in doing away with slaughterhouses in which animals are killed by small butchers; and I am a great believer, if it possibly could be done in inspecting cattle before they are killed. The inspectors would then have the best opportunity of ascertaining whether the animal is in a diseased or in a healthy condition. There are many diseases, no doubt, that would be quite discernible by the veterinary inspector. We are called in to ascertain whether a carcase is fit for human food. The carcase has been dressed, and you see neither lungs, viscera, nor any internal organs. You do not see the skin, and yet you are expected, as an expert, to tell whether the animal has died, or whether it has been in the last throes of death, and whether the meat is fit for human food. Of course no butcher will allow you to cut into the mammary glands, as Professor M'Fadyean has told you; no butcher will allow you to incise the liver to see if it is affected by tuberculosis. You can inspect—if it is there—the mesentery, and probably you may inspect the lungs, and you are expected to be able, without sufficient data, to place your fingers upon a carcase and say whether it is fit for human food. Who is to decide this matter? Here we have my friend Professor M'Fadyean saying that even the carcase of an animal that had puerperal fever is fit for human food.

Prof. M'Fadyean!—No, I do not say that.

Mr. Peter Taylor!—I contend that if a cow has been in labour, and has died within twenty-four hours, it is not fit for human food. I am strong upon that point. There is no doubt that we are behind in this 19th century, and if you are determined that veterinary science, and that you, as representing the veterinary profession, shall ascend to a higher stage in the ladder of science, you must look to yourselves.

"To thine own self be true;
And it must follow, as the night the day,
Thou canst not then be false to any man."

But, gentlemen, there is something else which we have to consider. Is it derogatory in us to meet the constabulary inspector and the police inspector? He produces to you a paper as long as your arm. You have to elucidate the symptoms; you have to tell him the temperature, and you must wind up and tell him what the animal has died of, and after that you must value the animal. You see the carcase and you have to say if it is fit for human food. Now, as a practical man, I say, as I have said before—

"A little knowledge is a dangerous thing;
Drink deep, or taste not of the Pierian spring."

I am a man who has been in practice for over forty years, and I have got to such an age that I can hardly see with my natural eyes. But then we get a microscope, and with it we investigate disease and diseased germs. We have the tubercle bacillus, we have the anthrax bacillus, and we have, no doubt, if it could only be found out the puerperal bacillus, and I do not know how many hundreds more. Now, we are told by a great authority on sanitary science—and the police will tell you—that tuberculous beef, if it is well cooked, is fit for human food. No doubt it depends upon the stage; but I remember Professor M'Fadyean telling us that tuberculous meat is not fit for human food. I would ask the Professor to enlighten us upon these points, because I want to understand thoroughly what I am doing in dealing with these matters. I should like the Professor to tell us the most humane mode of destroying cattle. In France they use the pole-axe. If it is a young animal they cut its throat, or stick it, and it will bleed for half an hour. I was very much interested in their abattoir, and remained there the whole day watching the operations that were carried on. I am sure that we are very much indebted to the Professor for this paper, and I hope that on another occasion he will add to the information that he has given us upon these important points, especially with regard to the great point of whether such meat as I have described is fit for human food. I thank you all for listening to me, and I hope I shall be with you next year.

Mr. Locke:—The subject before us is one in which I have taken very great interest of late. It has been contended by a good many people that a butcher is the right and proper person to make inspections of food supply in the markets—that is, by people who have not perhaps thought the matter over very carefully; but to my mind, if they would only read the three sentences on page 5, they would not do so any more. "The main object of meat inspection is to exclude from the market all flesh of an unwholesome character," that is, to detect "the presence of pathogenic bacteria, capable of exciting specific diseases, such as anthrax, or tuberculosis," also

"the presence of animal parasites;" and also "the presence of poisonous substances." The ordinary butcher, although he may be able to tell whether the meat looks well, and appears fit for food, would not be able to point out the presence of such unless it was a very bad case. I am very pleased to say that the Manchester Corporation have taken the initiative in this matter, and have appointed a veterinary surgeon as their head meat inspector. I consider this a move in the right direction, and would like to impress upon all veterinary surgeons to bring what pressure they can upon their muncipal authorities, so that experts should be appointed as meat inspectors in all large cities. This, of course, is only in its infancy, and I think that if they put themselves out of the way to bring this matter forward before their representatives, eventually it will come about. At the same time I see a great difficulty in the thorough inspection of meat, so long as we have private slaughterhouses The public meat inspector cannot possibly visit all these private slaughterhouses, and it is not at the public slaughterhouses where diseased animals are brought; it is at private ones where diseased meat is smuggled in, and where an inspector cannot possibly get to see it. I should also impress on members of the Association, wherever they have the opportunity, to try and get rid of private slaughterhouses. Professor M'Fadyean goes very minutely into the question of examination; and I am afraid the inspector with three or four hundred cattle to inspect would find that he could not possibly carry out these details in the very minute manner which is proposed; but I expect it is when there is a case of doubt that the Professor intends that his minute directions should be carried out. There is another subject which I think is of very great importance, namely: the detection of the signs of putrefaction. We all know that that is where a great deal of disease originates in the human being, by eating flesh that has commenced to putrefy. Professor M'Fadyean gives a very good test whereby any veterinary surgeon or even private individual would be able to tell whether putrefaction has commenced, and I think it is of very great importance that he has brought this forward, and it is very instructive to all the members of the Association. I do not know that I have anything more to say upon the matter. I feel that the subject is one of great importance, and I hope it will be thoroughly discussed, so that we shall learn something before the meeting is over.

Prof. MACQUEEN:—I am sure I thank you very much for calling upon me. As Mr. Hunting mentioned this morning, the paper is certainly very concise and very lucid, and rather difficult for one to find any fault with. With regard to the mode of slaughter I have no fault to find with the methods mentioned by the essayist. At the same time I question whether the veterinary surgeon should engage himself in the consideration of the best mode of killing, when the chief function of his calling is to preserve life. But in killing animals for food it may be necessary sometimes to advise. I agree with the essayist that the pole-axe is the best method of killing, but when we come to the passage referring to calves, sheep, and pigs, I should like to enter my protest against the unmerciful mode in which pigs are killed in some parts of this country. They have been seized with a sharp hook in the upper jaw, pulled from the sty, stuck between the two first ribs, and then unhooked and allowed to wander about until they drop dead. That is the system pursued, I believe, even to the present day in the public slaughterhouses at Glasgow. The killing of sheep seems to me very cruel, but it is very difficult to interfere with the custom of trades that are not probably within the measure of any special enactment. Passing rapidly over the paper we come to "the requisite inspection of animals intended for food, prior to and after death." I have nothing to say regarding this section, except that I do not agree with the essayist when he wishes to impose upon the veterinarian the full power of saying whether a carcase is fit or not for human food; but in the last paragraph of this particular section he makes a distinction between the function of the veterinarian and the function of the medical officer. I think the proper position of a veterinarian on this question is to say that the carcase, so far as he is able to discover, is free from objectionable disease, and to leave it to the medical officer of health to determine whether the carcase is or is not fit for human food. I do not look confidently upon the prospect of the veterinarian being able to hold the power to say whether flesh is fit for human food. I do not think the veterinarian has any right to interfere in such a question. I do say, however, that the veterinarian has a right, and it is his proper province—and more should be engaged to-day in the work—to pronounce upon the condition of the carcase submitted to him. Sir Henry Simpson alluded very pertinently to this connection. Carcases are imported largely into this country, and they, no loubt, ought to be subjected to some sort of veterinary inspection. At the present time, I believe, they are inspected by the medical officer of health, the inspector of foods and drugs. It may be that by-and-bye the veterinarian will undertake that duty, and have to say whether a carcase is free from objectionable disease. I say objectionable disease, because I do not look upon every disease as calculated to interfere with the usefulness of a carcase, and if the veterinarian gives his opinion, and says of any particular carcase that, while it is diseased, the disease is not calculated to do any harm, he simply goes as far as he dares to do, leaving it to the officer of health to say whether it should be used for human food. As to inspection prior to slaughter—take average animals—animals that are sent to market to be sold for beef; a naked-eye inspection of the animal prior to slaughter is not worth anything, not even in cases of disease with which we are somewhat familiar. Inspection after slaughter is a most important thing, and I am entirely in agreement with the essayist, that on every occasion the inspection should be as perfect as circumstances will allow. It may not be possible in every place to carry out the minute inspection recommended by Professor M'Fadyean, but at the same time the veterinarian should never lose sight of the position he occupies before the public, and if he fails to find the necessary apparatus within his reach to carry out the inspection, he should apply to the authorities for a little more assistance, a little more apparatus, or whatever necessary materials he may require. Coming to the order in which the inspection should be carried out, I do not think it is worth while to allude to these, there being fourteen paragraphs, but I may state this, that some have objected to the incision of the mammary glands, to the incision of this or that; but what is the practice? The policeman, who hold a responsible position in many places, to-day exercises his right of incising different parts of the carcase, and he does not ask anyone's permission. He simply says, "This carcase looks a little peculiar; there is nothing very definite; it came in by rail this morning; I will look at it." He sticks his knife into the liver, the spleen, and the kidney; he cuts it between the ribs, and so on. All these things are done now. It is useless to offer any objection to a meat inspector exercising his calling. If a man is to inspect meat, he must inspect it. Then passing over "the order of examination in other animals," I come to "examination for the *trichina spiralis*." The essayist says, and I quite agree with him, it demands a special paragraph, and in some countries it receives special treatment; and reading on we come to the statement that "a naked-eye inspection is valueless for the detection of the *trichina spiralis*." We then have a number of figures given with regard to the staff engaged exclusively for

this work in the Berlin abattoir, which comprises over 200 people and costs £25,000. When I looked at these figures, I must say my mouth watered. I thought "Why should I be here? why not in Berlin, to participate in those large bonuses, in the large sum of £25,000; £25,000 for the examination of the carcases of pigs suspected of *trichinosis*. Some gentleman, I believe Sir Henry Simpson, asked a very important question. He asked if all these inspectors engaged in this *trichinosis* inspection were veterinarians. Now I happen to know that they are not all veterinarians, and it holds out some hope for a somewhat overcrowded profession in this country, in view of continental emigration, if necessary, particularly applicable to married men, that in Berlin some 40 or 50 women are engaged in this trichina inspection; they are engaged for the special duty because they have more patience, they are good microscopists, and they work very diligently at the detection of these small trichina. Now we pass on to the next paragraph: "The inspection of a diseased carcase, and the very imperfect means of ascertaining whether the meat is wholesome, or whether the animal is the subject of disease," and so on until we reach putrefactive changes. When putrefaction attacks a carcase, there is no doubt it is an objectionable carcase, and as a rule the meat inspectors and others engaged in the trade are pretty well aware of this state of the flesh. I do not think we need apprehend very much danger from putrefying or putrid carcases. When we come to the question of special disease, and have to discuss what diseases attacking animals are important to meat inspectors, we must consider whether we are to condemn every kind of diseased animal, or to confine our condemnation to animals that have been subject to some particular disease. No one has yet been able to record a case of death in the human family from eating the flesh of a rinderpest animal. No one can record a single bad result from the consumption of the flesh of a pleuro-pneumonia carcase. No one can object to the consumption of foot and mouth flesh. These are three diseases. I have passed for consumption over and over again carcases of pigs affected with swine fever, without any bad result. Taking other ailments. such as parturient apoplexy, I have not the slightest doubt that to the lay mind, and to a large percentage of the professional mind, the carcase of an animal which had died from milk fever is objectionable, but if one is put into a witness-box and asked to state why, it is a very difficult question to answer. But there are many diseases that are not objectionable. Take tuberculosis, about which so much discussion has arisen in different parts of the country, where trials have occurred lasting several weeks. I am not now speaking of a confirmed case, where the naked eye could discover lesions that there is no doubt about, but one of those cases with an isolated or localised lesion about which there is some doubt, where the microscope is required to discover the particular organism or the nature of the lesion. A question may arise in that case if the flesh is fit for human food. Before people could decide that question they would require to examine not only the diseased portion, but they would require to examine the whole carcase bit by bit. I believe that the best ground to take with regard to such a disease as pleuro-pneumonia is the removal of the diseased parts. With foot and mouth disease, the removal of the affected parts—the head, feet, and tripe—seems to be all that is necessary. In the case of swine fever, the internal organs seem to be the only objectionable parts. I remember hearing what the late Professor Dick used to do when called in to examine a doubtful carcase. He would say, "I think it is quite fit for food"; and, in support of his opinion, he would cut off a piece and eat it in the raw state. That was his test; if the flesh did not kill him it was fit for anybody. But that is not a good argument, and it will not do to-day. The veterinarian is expected to take a higher position on this question. He must say that the flesh of a diseased animal is unfit for food. It may not be agreeable to say so to his client, but it is necessary if the veterinarian is to occupy the position of sanitarian, or officer engaged in protecting the public health. That is a view which, I think, ought to be more encouraged. I believe if it were oftener insisted upon, the veterinarian would give better satisfrction, he would occupy a higher position, and his opinions would be received with much more credence. (Cheers.)

Mr. McGavin: This matter of meat inspection is one that we are all more or less connected with. I am going to speak to you as a country practitioner, not as an inspector of meat, because I have very little experience as such; but we all have disease to contend with, and it is very often our privilege to see animals killed in a diseased state and sent to large towns. I agree with what Mr. Hunting and the essayist have said, that all killing houses ought to be registered, but I would go further and say this: that all carcases sent into a large town like Manchester, or Birmingham, or London, ought to have the internal organs sent with them. I disagree with what Sir Henry Simpson says about simply looking at a carcase and declaring that carcase fit or unfit, in our point of view, for human food. What do we know about it unless we can examine the internal organs? I consider in many cases, speaking from my own small amount of knowledge, it is impossible to tell simply from the carcase whether it is fit for human food or not. The carcase appears in a good condition; it is of a good colour; but all the time it may be affected with tuberculosis and other diseases. Another thing I should like to say is this. We in the country are very often called in to cases of parturient apoplexy to advise our clients. The animal is in very good condition; it was on its feet three hours ago, and seemed to all intents and purposes, well and in good health; now she is down—she is comatose. It is a case of £ s. d. I advise my client to kill it as soon as possible, and send it off for human food. The carcase is sent into such a place as Birmingham; the meat inspector looks at it and says it is unfit for human food, and the result is that we bring very great discredit upon ourselves. I should like very much to have the opinion of this meeting as to whether animals suffering from parturient apoplexy are fit for human food. I believe they are quite good for human food. If the animal is killed in time, and properly bled before being dressed, I cannot see any reason why that animal is unfit for human food. Another disease is black leg. Sometimes, when you are called in early about that disease, the animal is in a good condition. You advise the person to kill the animal and dress it for human food. Is it fit to be consumed for human food? Or, in other words, is that animal healthy? ("No.") I must go along with Professor Macqueen in saying that in my experience I have known hundreds of those animals killed, and I defy any person to bring forward any case where disease has arisen or any person has been bad, from the consumption of such food.

Mr. R. Hughes: I come from a district, where we have a large number of valuable animals, especially shorthorns and Herefords. For many years the custom of the country has been to destroy offensive parts, and the remainder of the carcase has been consumed. I have not heard of a single case where bad results have followed. It has been done over and over again, and I never knew a bad result from adopting that practice.

(*To be continued.*)

## ARMY VETERINARY DEPARTMENT.

### UNDER THE BAN.

On several occasions we have alluded to certain obstacles which have been thrown in the way of the Superintendent of the C. V. Department, Madras. It has been pointed out how he is unfairly handicapped, how he is expected to work in Madras and up-country, how the work he does is made to appear unimportant, and the whole future prospects of veterinary science as a specially conducted branch of the administration have been disparaged in this part of India. It has been shown also how even the Superintendent's report has been referred back to him by the Board of Revenue, and eventually rewritten by someone in the Board's Office, someone absolutely unacquainted with the details of veterinary work. It appears that the Board of Revenue continues to treat the C. V. Department unfairly, all protests notwithstanding. We venture, therefore, to recapitulate in brief form some of the hardships which are deliberately—we had almost said, maliciously—inflicted upon the head of that department. The matter is not one with regard to which the public will trouble themselves much, but it is as well that they should understand what manner of Board it is that has charge of their interests, subject only to Government; and we have reason to hope that even while the public are silent, the subject of our complaints will be brought before the House of Commons at an early date, unless there is a prompt cessation of the "hounding down" system at present in favour with the Madras Board of Revenue in its relations with the Civil Veterinary Department. It is well-known that the Madras authorities have never yielded ready submission to the wishes of the Government of India in this matter. There is a curious idea current in certain bureaucratic circles in Southern India, that an agriculturist is the right man to attend to veterinary matters, whether educational or practical. Were this accompanied by a belief that a Veterinary Surgeon should hold the Agricultural portfolio we might understand it. But we cannot understand such a Government as our present one being deluded into the belief that no C.V.D. is necessary, merely because it interferes with the plans and prospects of one official, and he not of the highest standing.

The Board prepares his annual report and virtually compels him to sign it. Not satisfied even then, it depreciates to the utmost possible extent the value of the work that it admits to have been done, and holds the man responsible because the system upon which he is ordered to work is an impossible one. It would scarcely be unfair to add that it is intentionally so. Of course, it may be urged in reply that this is an *ex parte* statement. Let that be admitted, for purposes of argument. It is, however, a statement which we venture to think proves that there is need for a close inquiry on the part of Government. The information that has reached us points conclusively to the fact that there has been suppression of the truth if not actual falsehood, and the most lenient view that can be taken of the action of the Board of Revenue, is that it is the result of failure to realise that what has been put before it is not the truth, the whole truth, and nothing but the truth. As far as the Superintendent, C.V.D., Madras, is concerned, he is under the ban of the Board's displeasure:

> **"all his faults observed,**
> **Set in a note book, learn'd, and conn'd by rote."**

Nothing that he can do is right in the eyes of his superiors, or of the official to whom they intrust their consciences.—*The Madras Times.*

## EXTRACTS AND NOTES.

### THE CONTAGIOUS DISEASES (ANIMALS) ACT (IRELAND).

Returns for three months ending June 24th, 1893

| | | Nos. attacked. |
|---|---|---|
| Pleuro-pneumonia | | 0 |
| Rabies | Dogs | 73 |
| | other animals. | 44 |
| Glanders | | 3 |
| Anthrax | | 9 |
| Swine Fever | | 104 |

### Danger of handling Carcases of Animals affected with Anthrax (Splenic Fever or Splenic Apoplexy)

In view of the dangers arising from post-mortem examination of anthrax carcases it may be advisable to reproduce the following letter issued last June by the Secretary of the Board of Agriculture.

Sir,

"I am directed by the Board of Agriculture to refer to the fact that in the year 1887, in consequence of the occurrence of several cases of serious, and in some instances fatal, infection in the case of persons who had been employed in cutting up the carcases of animals affected with anthrax, the Agricultural Department of the Privy Council called the attention of Local Authorities to the matter, and pointed out the importance of the public being made aware of that source of danger to human life.

Several further fatalities from the same cause have recently been reported to the Board, and they desire me to ask you to again bring the subject before your Local Authority, and to suggest that it would be desirable that public notices should be issued, through the police or otherwise, drawing attention to the danger of skinning or cutting the carcase of an animal affected with anthrax, or of doing anything which will cause the effusion of blood. I am also to point out that such an act is in direct contravention of the provisions of the Anthrax Order of 1892 (No. 5049), and renders the person offending liable to prosecution.

As stated in the communication addressed to Local Authorities in 1887, the blood and all parts of the body containing blood, are, in cases of anthrax, highly

infective; and persons who have any abrasions, however slight, on their hands or arms, ought not to touch any portion of the carcases of animals which have died of the disease, or been slaughtered while suffering from it, and such persons should avoid contact with fodder, litter, manure, or other things which may be contaminated with the blood of diseased animals.

As regards the disposal of carcases, I am to point out that the Anthrax Order of 1892 makes it the duty of the Local Authority to dispose of the carcases of animals that were at the time of death or slaughter affected with anthrax, either by burial or destruction, and the Order provides that before a carcase is removed for burial or destruction it shall be covered with quicklime, and in no case may the skin of the carcase be cut, or anything done to cause the effusion of blood."

## IMPORTED ANTHRAX.

Anthrax is not a disease for which we should look in a British factory or workshop. It belongs rather to the cowshed; but under certain conditions it seems it is communicable to the human subject, and these conditions unfortunately appear to have been fulfilled only too well in the haircloth factory of Messrs. E. Webb and Sons, of Worcester. The raw material is largely imported from Russia and South America, where anthrax is more prevalent than in this country, and the germs of the disease are evidently conveyed in the hair of the animals affected. It was presumably in handling some of this germ laden hair or the sacking which had been in contact with it that the unfortunate boy, Edwin Hodgets, became inoculated with the terrible disease to which he ultimately succumbed.

From the evidence given at the inquest it was not quite clear in what manner young Hodgetts acquired the dreadful disease; but there can be no reasonable doubt that it was directly or indirectly through contact with contaminated hair. He had been suffering, it seems, from a small boil under his eye, and after handling some of the canvas bagging in which the raw hair had been brought from Russia, he was seen to rub the swelling, in ignorance doubtless of the great risk he was running. On another occasion the poor boy had been observed playing in the warehouse where the bales of hair were stored, though he had no business there. About a fortnight ago he was taken ill. On the 17th he was admitted to the Worcester Infirmary, suffering from all the symptoms of anthrax, and on Friday last he died. When admitted to the infirmary he had a swollen face, and a small boil on his cheek, with a black centre surrounded by a row of vesicles. His temperature was high, and he complained of a general feeling of *malaise*. Frequent vomiting, tightness in the throat, difficulty of breathing, and abdominal pains marked the progress of the fatal disease, until the youthful sufferer was finally released from his bodily troubles after a period of extreme prostration. Any doubt, either as to the nature of the disease or its cause, was removed by the testimony of the medical witnesses, and the admission of the boy's employers that this was the fifth case of the kind that had occurred at their works within the last twelve months. The rate of mortality indicated by this admission seems terribly high, and both the coroner and the jury expressed their conviction that the lad's employers were not to blame, and that they had adopted every means in their power to safeguard the health of their workpeople. It is evident, however, that something more than the simple boiling of the suspected hair is needed for the effectual protection of those who are brought in contact with it, and that some good disinfecting process ought to be forthwith adopted.—*Birmingham Post.*

## LACTATION IN A MULE.

In a recent issue of *The Agricultural Gazette* reference is made to the cases of abnormal lactation reported in *The Veterinary Record* on May 6th and previously; with the following additional instance:—

"Even the infertile mule has been known to develop milk. The late Mr. J. B. Evans, of Reit Fontein, Cape Colony, the well-known breeder of Angora goats, has recorded an instance which came under his observation. He saw a mare mule relieved of her milk by her attendant while being put up on her journey at a stable in one of the towns in his district. The mule, in fact, was when at home suckling a foster colt, the produce of a mare. It was stated by the owner, and told by his immediate neighbours, that each year as the mare foaled out on the "veldt," the mule would adopt the foal and drive its mother away, and do all to tempt the young one to suck. For several days the foal was reduced to semi-starvation, but ultimately, continual irritation of the mule's udder had the effect of stimulating a full flow of milk."

## HOW SWINE FEVER IS SPREAD.

At the Coleshill Police Court on Thursday Aug. 30th, before the Hon. H. Arden Adderley (Chairman) and other magistrates, William Noakes and Harry A. Hodges, butchers and cattle dealers, Nechells Green, Birmingham, were summoned by Police-sergeant Bastock, inspector under the Contagious Diseases (Animals) Act for this district, for unlawfully exposing for sale 15 store pigs, in the Water Orton Stock Sale Yard, on July 26, without having previously made and delivered to the police a declaration stating that every head of swine so exposed had belonged to them, had been in their possession 28 days at least prior to such sale, and had been free from disease and not exposed to infection. Defendants both pleaded guilty. Mr. J. Norman, who prosecuted on behalf of the Warwickshire County Council, said that the provision in question was made in accordance with an order of the Privy Council, dated September 16, 1886, Regulation 99, followed up by an order of the Board of Agriculture, made on August 13, 1890, authorising the Local Authority to make regulations for preventing the spread of swine fever. The Executive Committee of the County of Warwick, in pursuance of this authorisation accordingly made the regulation set forth in the summons. It seemed that in this neighbourhood swine fever had broken out, and there had been four or five cases in the district. The police authorities at once set to work to see how they had been introduced into the neighbourhood, and Sergeant Bastock traced the whole of these cases to the lot of pigs sold by the defendants at Water Orton Stock Sale. On further inquiry he found that the owners had not made the declaration as required by the Executive Committee of the County. They all knew what a serious thing it was, in the present depressed state of agriculture, to have cattle disease spread; and the police, in the bounden execution of their duty, at once took proceedings against the defendants. Police-sergeant Bastock having formally proved the facts, as above stated, defendants admitted the charges, but pleaded ignorance of the regulation. Lord Norton (to one of the defendants): How long have you been a dealer? Defendant: Six years. Lord Norton: Then I

cannot understand how you can be ignorant of these regulations. The Police Superintendent: And there are plenty of them posted about in the markets and elsewhere. The Chairman said a very serious offence had been committed. The defendants saw what danger and injury they had inflicted on the farmers of this district, besides causing the market at Water Orton to be closed for a month. They were liable to be fined £5 for every animal exposed, and the Bench, having regard to the gravity of the matter, felt that they could not do less than fine each of the defendants £10 and £1 5s. costs. A cheque-book was at once produced for the payment of the amounts.—*Birmingham Gazette.*

## PARLIAMENTARY.

### Glanders in Scotland.

Sir H. Maxwell asked the President of the Board of Agriculture whether he had any information of repeated outbreaks of glanders among horses in the county of Wigtown, and whether in each case the disease had been traced to the horses of a certain dealer in South Ayrshire, the local authority of which county had repudiated all responsibility in the matter; and whether he would cause stringent inquiry to be made in order to bring to an end such a serious state of affairs?

Mr. Gardner:—I am sorry to say that it is the case that several outbreaks of glanders have occurred in Wigtownshire during the period named in the question. It has been stated by the Wigtownshire County Council that the disease was introduced into that county from Ballantrae, in Ayrshire, but I am informed by the Ayrshire County Council that the disease originated in Wigtownshire. I have no authority to determine the question at issue between the two councils, nor would there, in my opinion, be any advantage in my doing so. What is requisite is that both local authorities should take active measures against the disease wherever it may appear in their respective counties, and I have no reason to suppose that there is any disinclination on the part of either of them to do so.

Sir H. Maxwell:—Will the right hon. gentleman undertake such a stringent inquiry as I suggest?

Mr. Gardner:—Under the Glanders Order issued last year, the duty devolves on the local authorities to administer that order, and I see no reason to interfere in the matter.

Sir H. Maxwell:—Suppose the local authorities fail to do their duty?

Mr. Gardner:—If it was represented to me that they failed to do their duty, it might be for the Board of Agriculture to step in, but in the meantime it is for me to hear what the local authorities have to say in the matter.—*The Times*

## Foreign-made Clinical Thermometers.

The Board of Trade have prosecuted at the Mansion House Messrs. Dollond & Co., of Ludgate Hill, manufacturing opticians, and Messrs. Leslie & Co. (Limited), druggists' sundriesmen, Bond Court, Walbrook, for infringments of the Merchandise-marks Act in applying false trade-descriptions to clinical thermometers. In each case the thermometer bore the name of the defendant and the word "London," but was alleged to be of German make. Messrs. Dollond denied that they had the slightest intention to defraud, or that they were aware the thermometer was of German make. Messrs. Leslie said they had believed the thermometers to be of British make, though it appeared that since the action was commenced the person supplying them had admitted that they were of German origin. They claimed, however, that no offence had been committed, as the inscription "Leslie & Co., London," simply indicated that they were the retailers and sellers of the article.

Mr. Alderman Newton imposed a fine of £10 and costs in each case.

Mr. Clulow, for Leslie's, said the question was of so much importance that his clients would ask for a case for the opinion of the High Court.

## The Value of a Dead Horse.

The following analysis of the product of a dead horse will be read with interest:—says *The Westminister Gazette.*

Carcase, from 20s. to 60s.; average value 40s.; weight in pounds, from 672 to 1,138; average weight, 950 lb.

| | Weight. | Value. | Uses. |
|---|---|---|---|
| Hair | 1½lb. | 8d. to 1s. per lb. | Hair cloth, mattresses. plumes. |
| Hide | 30lb. | About 8s. | Leather. |
| Tendons | 6lb. | ... ... | Glue, gelatine. |
| Flesh | 224lb. | Boiled, 28s. | Meat for Dogs and Cats |
| Blood | 60lb. | ... ... | Prussiate of potash and Manures. |
| Heart and tongue | | ... ... | A mystery |
| Intestines | 80lb. | ... ... | Covering sausages and the like. |
| Fat | 20lbs. | 3s. 4d. ... | Used for lamps after distilling. |
| Bones | 160lbs. | 4s. 6d. cwt. | Knife-handles & bone-dust. |
| Hoofs | 6lbs. | 8s. to 10s. cwt. | Buttons, & snuff-boxes |
| Shoes | 5lb. | 5s. to 10s. cwt. | Old iron. |

It is said that the tongues of young horses are retailed for human consumption, whilst the hearts find their way into some of the mysterious compounds on which certain porkbutchers are an authority. Horse-flesh, as is well known, is largely eaten as human food on the Continent.

## A Bullock with a Wooden Leg.

Some time ago a fine bullock, belonging to Mr. McIntyre, farmer, Burford-lane, Lymm, had the misfortune to get its leg entangled in a wire fence. Before the animal could be released the leg was cut through to the bone. Disease of the bone ensued, and it became evident that the life of the best could only be saved by amputation. Mr. A. Munro, V.S., Altrincham, assisted by his pupils, Messrs. R. Hadfield and J. Senior, accordingly placed the bullock under the influence of chloroform, and the limb was neatly amputated. The wound healed up, and on the 1st August the bullock was provided with a wooden leg. Since then the animal has improved wonderfully, and is putting on flesh at a very fast rate, though whether the owner will be able to exhibit at the Altrincham Agricultural Society's show is not yet decided. The artificial limb answers admirably, and the cure is regarded as most satisfactory.—*The Altrincham and Bowdon Guardian.*

## The Paraldehyde Habit.

Nearly all the hypnotics which are introduced as substitutes for chloral are said not to have the bad characteristic of becoming the master of the persons who take them. Paraldehyde was one of the lot: but it appears from a paper communicated to the *Edinburgh Medical Journal* by Dr. F. A. Elkins that a paraldehyde habit is possible. He had a case in the Edinburgh Asylum: a man of 65, who had taken paraldehyde for 2½ years, and latterly took as much as 16 ozs. per week, "seven teaspoonfuls" giving him only half an hour's sleep. He became very ill, and was admitted to the asylum for treatment. Dr. Elkins noticed that many of the bodily and mental symptoms, with some notable exceptions (such as the extreme emaciation, marked effect upon the heart's action, and abnormally large appetite), were similar to those found in *delirium tremens;* and from the the chemical relationship of alcohol and paraldehyde, this is what might be expected.

## CORRESPONDENCE.

### ANŒSTHETICS IN VETERINARY PRACTICE.

SIR,

The report of the meeting of the Border Counties Veterinary Association in last Saturday's *Record* makes me to have stated "that I had two deaths in cattle under chloroform—for which deaths I got the *credit*." As this does not fairly represent the facts, I ask you to find space for a few words of explanation.

I stated that I had had two death in cattle after using chloroform, for which deaths I was to some extent getting the *credit* (?) but that post-mortem examination in each case revealed an internal rupiure; so that although probably the chloroform *had slightly accelerated death*, still it had really nothing to do with causing it.

Being a most enthusiastic believer in the use of anœsthetics I am loth to let such a damaging statement pass uncorrected, hence this indulgence of the *cacœthes scribendi*.—Yours faithfully,

G. GARTSIDE MAYOR, F.R.C.V.S.

### MILK FEVER OR PARTURIENT APOPLEXY.

SIR,

I have just received a copy of the transactions of the National Veterinary Association's meeting held at Manchester, July 26th, and 27th last. I very much regret that I was unable to attend the gathering.

On running through the printed proceedings I came across the following passage on page 90, line 4th, where a Mr. R. Barron is reported to have said:—"Mr. Campbell and Mr. Thompson of Aspatria, both say it is due to absorption of colostrum." Seeing that I was not at the meeting to challenge this statement, am I in order, Mr. Editor, in replying to it through your columns? Mr. Barron either has never read my remarks or has misunderstood them. If he will refer to the report of the proceedings of 1892, page 50, commencing on the sixth line from the bottom, he will find the following:—"Now if a collapse or paralysis of the milk-producing parts of the udder is caused by the sudden withdrawal of all the milk at once, the nervous power deranged by the pressure being too quickly removed, and the secretion of milk suspended, it stands to reason that the *elements* which enter into the composition of the colostrum, or "beestings," which are at this time contained in the blood of the cow—more particulary in deep milkers—and should be eliminated from the body by the udder, are thrown on the circulatory system, acting as a foreign body, and further increasing the already irritated nervous centres, causing the peculiar wild excitement seen early on in the affection" There is no mention of the absorption of colostrum here. How can the colostrum be absorbed when it has not been secreted? The colostrum must be secreted along with the milk, but, I say the *elements* of the colostrum are in the blood, and should be eliminated from that fluid by the action of the mammary gland, but it, being paralysed by the sudden removal of all the milk, has lost all function, and the loaded elements of colostrum are thrown back on the system. Now, is it not just possible that these colostrum elements—more particulary in deep milkers—on being thrown back on the blood stream have a somewhat similar action as a dose of opium, chloroform, chloral or an overdose of spirit, acting on the nerve centres and producing first the exciting effect and finally coma, as seen in the action of the drugs named? Again, may not the chloral hydrate treatment, now so much talked of, establish its action owing to the ætherial qualities of the drug being readily absorbed into the blood and thus preventing the colostrum elements from establishing the full power of their baneful influence.

If at the onset of the complaint, or as soon as the animal falls and is unable to regain her feet, she were slaughtered, I believe the brain would be found pale and anæmic—like a piece of white paper. The late Professor John Barlow made a post-mortem early on in the complaint and found this result (*vide* his lectures). But if the malady is allowed to run its course the brain and all the other parts of the body become congested for the want of the guardian influence of the nervous system both systemic and sympathetic. Again I repeat that milk fever in my opinion is due to:—

1st. *Predisposing Cause:*—Removal of calf from the presence of the mother.

2nd. *Exciting Cause:*—Withdrawal of all the milk at once, removing the pressure too suddenly; causing paralysis of the milk-producing cells, and cessation of the milk stream, thus throwing the colostrum elements on to the system, inducing excitement, and finally coma.

3rd. If the function of the udder can be maintained and secretion of milk carried on, we would have no milk fever.

HENRY THOMPSON, M.R.C.V.S.

Aspatria, Aug. 31, 1893.

### THE DORSET COUNTY COUNCIL.

SIR,

The modest request of the Dorset County Council in your advertisement sheet of last week is, I fancy, just a wee bit too thick. Good heavens! what next? Why do not we hear that a certain district finds itself suddenly deficient in legal knowledge and requires a thorough course of legal instruction free, with attendance at law courts etc., also a course of lectures on conveyancing etc.! But no, the poor unfortunate county vet. is once again to be offered up at the altar of the British Agriculturist.

Surely we have difficulty enough to gain a modest pittance in these days of free veterinary advice in nearly every paper, Ditto likewise also Mr. Hewitt's (M.R.C.V.S.) free pamphlet sent with Day, Son and Hewitt's medicines, and many other forms of competition. But no, the Dorset farmer thinks the time has come when "every man his own V.S. shall be." So far so good, but let him go to the veterinary College and pay his fees like a man, and not try to obtain it at the expense of a hard working profession and the county rates. I can only say if this kind of thing goes on, any young man knowingly and willingly spending his time and money in the hope of becoming a country veterinary surgeon will be "sowing his seed on stony ground" with a vengeance.

How the College Council can have the conscience to raise the fees and lengthen the course of study, considering the amount of protection their diploma carries with it, I for one cannot understand.

F. P. BENNETT, M.R.C.V.S.

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COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs, J. H. Parker, F. P. Bennett, H. Thompson, G. G. Mayor, T. H. Green, P. Moir, A. Munro.

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We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from ocal papers, containing facts of interest.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editor to be addressed 20 Fulham Road, S.W.